Grand Junction Office Facility
Grand Junction, Colorado
Long-Term Surveillance and Maintenance Program

U.S. Department of Energy
Grand Junction Office

F A C T S H E E T

The Grand Junction Office has provided cost-effective and efficient stewardship for more than 13 years

Overview

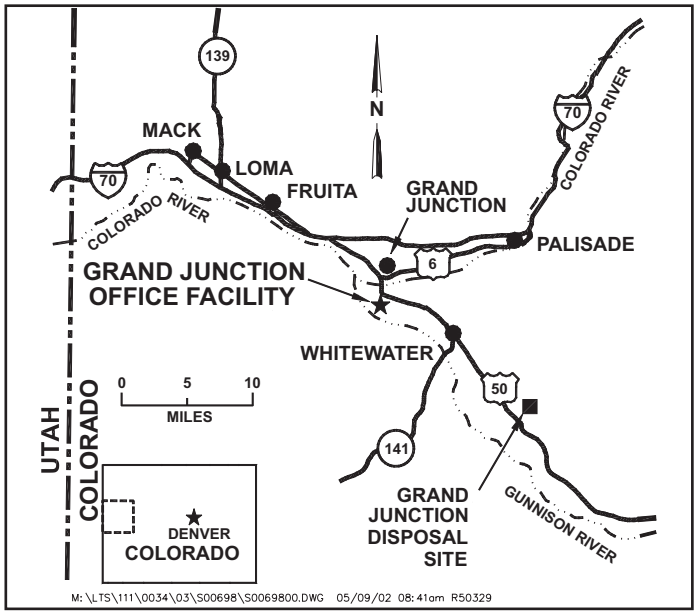
The U.S. War Department acquired the site for the Grand Junction Office facility in 1943 to enable the Manhattan Engineer District to procure uranium for the Manhattan Project. Subsequently, the U.S. Atomic Energy Commission (AEC), the Energy Research and Development Administration, and the U.S. Department of Energy (DOE) operated the facility. The property is located less than 1 mile from downtown Grand Junction in Mesa County, Colorado. It occupies approximately 61.7 acres on an accretionary bend of the Gunnison River.

The Manhattan Engineer District operated a refinery at the site from 1943 to 1946 to treat and concentrate uranium oxide, a by-product of vanadium-ore processing. Refinery wastes, including alumina cake and liquid discharges, were disposed of on site.

In late 1947, AEC established the Colorado Raw Materials Office to manage the domestic uranium procurement program. An AEC exploration office located in the city of Grand Junction was combined with the procurement function within the AEC Grand Junction Operations Office. That office was responsible for receiving, sampling, and analyzing uranium and vanadium concentrates purchased from ore-processing operations in the western United States. AEC operated a uranium-concentrate sampling plant and an assay laboratory at the site until 1974.

A research program to test experimental uranium-ore milling techniques began at the Grand Junction Office in 1953. Two pilot mills constructed on the property operated sequentially from 1953 to 1958.
Most of the structures associated with the pilot mills were demolished during remediation of the site. Pilot milling operations were the primary source of contaminated materials buried at the Grand Junction Office, and leaching of stockpiled and buried tailings contaminated ground water at the facility.

DOE conducted cleanup of radioactive contamination at the Grand Junction Office from 1986 through 2001 in accordance with management protocols of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended. In 2001, DOE transferred 7.97 acres to the U.S. Army Reserve and the remainder of the property



to a local nonprofit entity, the Riverview Technology Corporation. Some radioactive contamination remains on the property; DOE has deferred remediation of this contamination under provisions of CERCLA 120(h), as approved by the State of Colorado, to facilitate property transfer.

In 1989, DOE established the Long-Term Surveillance and Maintenance (LTSM) Program at the Grand Junction Office to provide stewardship for DOE remedial action sites, disposal sites, and other sites, as assigned, and to establish a common office for the security, surveillance, monitoring, and maintenance of those sites. Responsibility for stewardship of the Grand Junction Office facility was assigned to the LTSM Program in 2001. By extending long-term stewardship to the Grand Junction Office facility, DOE ensures continued protection of the public and the environment and ongoing regulatory compliance for this property. Information pertaining to periodic monitoring, inspections, and maintenance for the Grand Junction Office facility and all LTSM Program sites is maintained in an information repository at the DOE Grand Junction Office.

Regulatory Setting

DOE acquired the radioactive materials at the Grand Junction Office under authority of the Atomic Energy Act of 1954 (Public Law 83–703). Most of the

radioactive materials consisted of uranium mill tailings, which are similar to materials regulated either as residual radioactive material under Title 40 *Code of Federal Regulations* Part 192 (40 CFR 192) or as 11(e)(2) by-product material under the Atomic Energy Act of 1954. Other radioactive materials at the Grand Junction Office included refined uranium oxide (yellowcake) and incidental laboratory waste.

The primary relevant and appropriate regulations and guidance for the remediation of soil and structures at the Grand Junction Office are 40 CFR 192 and DOE Order 5400.5, *Radiation Protection of the Public and the Environment*. Ground water at the facility is regulated under State of Colorado Title 5, *Code of Colorado Regulations*, Part 1002–41, "The Basic Standards for Ground Water," including secondary drinking water and agricultural standards, and 40 CFR 192. Surface water at the facility is regulated under Title 5, *Code of Colorado Regulations*, Part 1002–35, "Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins."

DOE holds title to and responsibility for the radioactive materials generated at the Grand Junction Office facility prior to October 1, 2001, and any radioactive materials generated through DOE operations at the facility subsequent to that date.

Final Facility Condition

Remedial action at the Grand Junction Office facility started in 1986 and concluded in 2001, but some radioactive contamination remains on the property and its remediation has been deferred.

Approximately 265,000 cubic yards of contaminated material was removed from the site and was disposed of with Uranium Mill Tailings Remedial Action Project residual radioactive materials at the Grand Junction Disposal Site. Levels of radioactivity in remediated open land areas and buildings comply with DOE radiological release guidelines, and those areas have been released for unrestricted use.

A portion of the Grand Junction Office facility is occupied by in-ground radiological instrument calibration models. The models contain zones of concrete mixed with naturally occurring radioactive material and, as such, do not require regulation. Locks have been placed on the models as a security precaution.

Also, a 300-foot-deep calibration borehole was abandoned in place in accordance with State of Colorado requirements. Depth indicator foil containing radium-226 is present at depths of 81 feet and 181 feet. The well casing was perforated to allow injected cement grout to encase the foil, thus eliminating a potential hazard to health or the environment if the well is left undisturbed.

Deferred Remediation

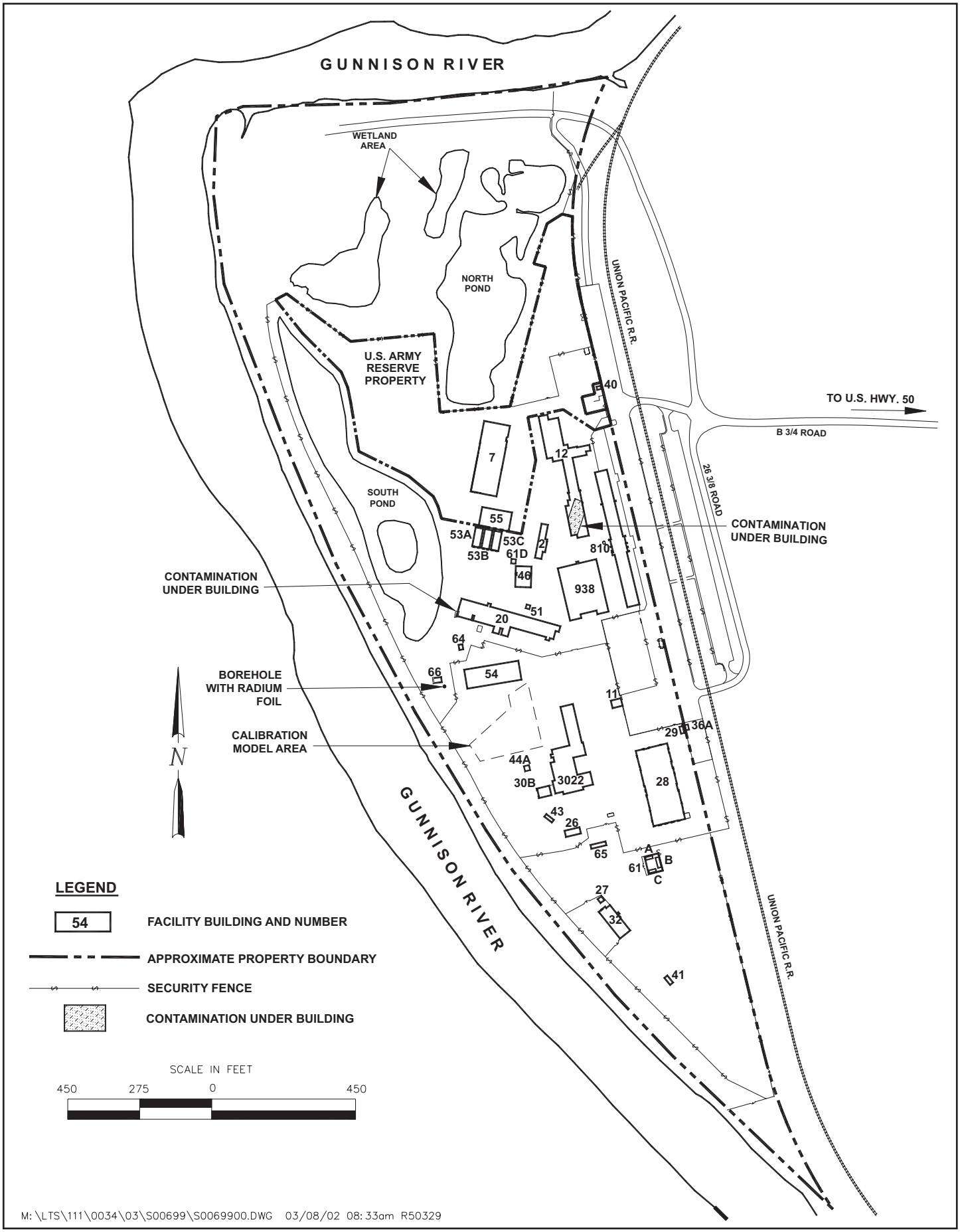
Remediation of the following radioactive contamination remaining on the property has been deferred:

- A contaminated concrete slab, believed to be the remains of a former uranium mill, and contaminated soil under the slab are present under the south portion of Building 12. On the basis of a radiological release survey conducted in Building 12, the concrete slab and underlying soil do not pose a health risk to occupants of the building. DOE leases Building 12 from the Riverview Technology Corporation to support DOE projects.
- A deposit of contaminated soil and concrete rubble was identified beneath the southwest corner of Building 20 during remediation of exterior drainpipes. On the basis of radiological release survey measurements obtained in Building 20, this deposit does not pose a health risk to the occupants of the building. Building 20 has been used as an analytical chemistry laboratory since 1953 and is leased by DOE from the Riverview Technology Corporation for continued support to DOE projects.
- The shallow alluvial aquifer underlying the facility and its surface water expressions (two ponds and two wetland areas) are contaminated with radionuclides and associated constituents from former milling and tailings disposal activities.

In accordance with State of Colorado Executive Order D 013 98 and CERCLA Section 120(h), DOE requested approval by the State of Colorado for deferred remediation of the contamination remaining at the facility. The Governor approved the request on August 15, 2001.

DOE will demolish Buildings 12 and 20 when DOE operations in those buildings cease. The building structures have been released for unrestricted use, and demolition debris will be hauled to a public landfill. DOE will remediate the contaminated materials beneath the buildings and dispose of the materials at the Grand Junction Disposal Site.

Ground water and surface water are being remediated through natural flushing of the aquifer. The ground water and surface water are predicted to flush clean of contamination between 2050 and 2080. Institutional controls have been established as part of the remedy to prevent use of and inadvertent exposure to the contaminated water.



Grand Junction, Colorado, Office Facility

LTSM Program Activities

DOE will conduct stewardship activities at the Grand Junction Office facility to protect human health and the environment, to promote safety, and to comply with applicable regulations and DOE policy. The State of Colorado, as regulator, has authority to oversee DOE stewardship activities at this facility. DOE retains the right of access to the facility to conduct stewardship activities, as established in the transfer agreements with the Riverview Technology Corporation and the U.S. Department of the Army. Stewardship activities at the Grand Junction Office will include

- Monitoring ground water and surface water at the facility to verify that remediation is occurring by natural flushing of the aquifer and to ensure compliance with State of Colorado and federal standards.
- Managing radioactive contamination left in place beneath Buildings 12 and 20 through inspections and access controls.
- Monitoring institutional controls, such as restricting use of ground water and surface water (and associated aquatic life); preventing disturbance of soil and structures associated with contamination beneath Buildings 12 and 20; and preventing disturbance of the calibration borehole that contains radium foil.

The LTSM Program also manages access to and use of the in-ground calibration models.

The institutional controls and obligations of involved parties are defined in deed restrictions and transfer agreements and will survive subsequent property transfers. These institutional controls will be monitored by the LTSM Program and enforced by the State of Colorado Department of Public Health and Environment, as authorized by CERCLA and state law, until the facility can be released for unrestricted use and unlimited exposure. DOE will manage institutional controls for the borehole containing radium foil in perpetuity.

Contacts

For more information about the LTSM Program, the DOE calibration models, or the Grand Junction Office facility, contact

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http://www.gjo.doe.gov/programs/ltsm